

## CLAIMS

1           1.       (original) Circuitry comprising a filter having one or more filter sections, wherein:  
2           at least one of the one or more filter sections comprises a plurality of transconductor (gm) cells;  
3       and  
4           at least one of the gm cells can be configured to have substantially zero transconductance, such  
5       that the at least one filter section will oscillate.

1           2.       (original) The invention of claim 1, wherein the at least one filter section is adapted to  
2       oscillate at a cutoff frequency of the filter section.

1           3.       (currently amended) The invention of claim 1, wherein the at least one filter section has  
2       an input node adapted to receive an input signal for the at least one filter section, an intermediate node,  
3       and an output node adapted to present an output signal for the at least one filter section and further  
4       comprises:

5           a first gm cell connected between the input node and the intermediate node;  
6           a first capacitor connected between the intermediate node and a voltage reference;  
7           a second gm cell connected between the intermediate node and the output node;  
8           a second capacitor connected between the output node and the voltage reference;  
9           a third gm cell connected at both ends to the intermediate node; and  
10          a fourth gm cell connected between the output node and the intermediate node, wherein:  
11          the at least one of the gm cells is the third gm cell; and  
12          the third gm cell comprises a set of switches that enable the third gm cell to be  
13       configured to have substantially zero transconductance, such that the at least one filter section will  
14       oscillate.

1           4.       (original) The invention of claim 3, wherein the voltage reference is ground.

1           5.       (original) The invention of claim 1, wherein:  
2           the at least one filter section is in a main signal path of the filter; and  
3           the at least one filter section is adapted to be configured to oscillate in order to tune the at least  
4       one filter section.

1           6.       (original) The invention of claim 5, wherein each filter section in the main signal path of  
2       the filter can be configured to oscillate in order to tune each filter section.

1           7.       (currently amended) The invention of claim 1, wherein:  
2           the one or more filter sections comprise one or more main-path filter sections and a non-main-  
3       path filter section;  
4           the filter comprises a main signal path having the one or more main-path filter sections;  
5           the at least one filter section is the non-main-path filter section, which is not part of the main  
6       signal path;  
7           the ~~at least one~~ non-main-path filter section is a replica of at least one main-path filter section in  
8       the main signal path; and  
9           the ~~at least one~~ non-main-path filter section is adapted to be configured to oscillate in order to  
10       tune the at least one main-path filter section in the main signal path.

1           8.       (original) The invention of claim 1, wherein:  
2           the at least one filter section comprises tuning circuitry adapted to tune the at least one filter  
3 section; and  
4           the tuning circuitry is adapted to store tuning control information for the at least one filter  
5 section such that the at least one filter section can be tuned intermittently.

1           9.       (previously presented) The invention of claim 8, wherein information based on the  
2 tuning control information of the at least one filter section is used to tune one or more other filter  
3 sections in the filter.

1           10.      (original) The invention of claim 1, wherein the at least one filter section is adapted to  
2 oscillate without relying on phase-locked loop circuitry.

1           11.      (original) The invention of claim 1, wherein the one or more filter sections are  
2 biquadratic filter sections.

1           12.      (original) The invention of claim 1, wherein the one or more filter sections are  
2 connected to form a ladder structure.

1           13.      (currently amended) A method for operating a filter having one or more filter sections,  
2 wherein:  
3           at least one of the one or more filter sections comprises a plurality of transconductor (gm) cells;  
4           the method comprising:  
5               applying power to the filter; and  
6               configuring at least one of the gm cells to have substantially zero transconductance, such  
7 that the at least one filter section will oscillate.

1           14.      (original) The invention of claim 13, wherein the at least one filter section oscillates at a  
2 cutoff frequency of the filter section.

1           15.      (currently amended) The invention of claim 13, wherein:  
2           the at least one filter section has an input node that receives an input signal for the at least one  
3 filter section, an intermediate node, and an output node that presents an output signal for the at least one  
4 filter section;  
5           the at least one filter section further comprises:  
6               a first gm cell connected between the input node and the intermediate node;  
7               a first capacitor connected between the intermediate node and a voltage reference;  
8               a second gm cell connected between the intermediate node and the output node;  
9               a second capacitor connected between the output node and the voltage reference;  
10              a third gm cell connected at both ends to the intermediate node; and  
11              a fourth gm cell connected between the output node and the intermediate node, wherein:  
12               the at least one of the gm cells is the third gm cell; and  
13               the third gm cell comprises a set of switches that enable the third gm cell to be  
14 configured to have substantially zero transconductance, such that the at least one filter section will  
15 oscillate.

1           16.      (original) The invention of claim 13, wherein:  
2           the at least one filter section is in a main signal path of the filter; and  
3           the at least one filter section is configured to oscillate in order to tune the at least one filter  
4 section.

1 17. (currently amended) The invention of claim 13, wherein:  
2 the one or more filter sections comprise one or more main-path filter sections and a non-main-  
3 path filter section;  
4 the filter comprises a main signal path having the one or more main-path filter sections;  
5 the at least one filter section is the non-main-path filter section, which is not part of the main  
6 signal path;  
7 the ~~at least one~~ non-main-path filter section is a replica of at least one main-path filter section in  
8 the main signal path; and  
9 the ~~at least one~~ non-main-path filter section is configured to oscillate in order to tune the at least  
10 one main-path filter section in the main signal path.

1 18. (original) The invention of claim 13, wherein:  
2 the at least one filter section comprises tuning circuitry that tunes the at least one filter section;  
3 and  
4 the tuning circuitry stores tuning control information for the at least one filter section such that  
5 the at least one filter section can be tuned intermittently.

1 19. (original) The invention of claim 18, wherein information about the tuning of the at least  
2 one filter section is used to tune one or more other filter sections in the filter.

1 20. (original) The invention of claim 13, wherein the at least one filter section oscillates  
2 without relying on phase-locked loop circuitry.

1 21. (new) The invention of claim 1, wherein:  
2 the at least one gm cell has first and second input nodes;  
3 the at least one gm cell is adapted to be configured to have non-zero transconductance by  
4 selectively applying two different input signals to the first and second input nodes; and  
5 the at least one gm cell is adapted to be configured to have substantially zero transconductance  
6 by selectively applying a single input signal to the first and second input nodes.

1 22. (new) The invention of claim 21, wherein:  
2 the two different input signals are a differential signal pair; and  
3 the single input signal is a common-mode signal corresponding to the differential signal pair.

1 23. (new) The invention of claim 13, wherein:  
2 the at least one gm cell has first and second input nodes;  
3 the at least one gm cell is adapted to be configured to have non-zero transconductance by  
4 selectively applying two different input signals to the first and second input nodes; and  
5 the at least one gm cell is configured to have substantially zero transconductance by selectively  
6 applying a single input signal to the first and second input nodes.

1 24. (new) The invention of claim 23, wherein:  
2 the two different input signals are a differential signal pair; and  
3 the single input signal is a common-mode signal corresponding to the differential signal pair.